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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,040	07/15/2003	Michael I. Thompson	QN1022.US	7524
22145 7590 02/16/2007 KLEIN, O'NEILL & SINGH, LLP 43 CORPORATE PARK SUITE 204 IRVINE, CA 92606			EXAMINER MUI, GARY	
			ART UNIT 2609	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			02/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/620,040

Applicant(s)

THOMPSON, MICHAEL I.

Examiner

Gary Mui

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 15-22 is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 23, 24, 27 and 28 is/are rejected.
- 7) ☒ Claim(s) 5-7, 9, 10, 12-14, 25 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/29/2003, 05/27/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because for figure 2 reference numbers is needed for the boxes encompassing the Disk and Host and for the state machine figures a descriptive legend is needed for clarity. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that

explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claims 1 – 10, 12 – 14, 23 – 26, and 28 are objected to under 37 CFR 1.75 because of the following informalities:

For claim 1 line 6, it is suggested to insert a semicolon after the word “header” so that the sentence will be grammatically correct.

For claim 2 line 3, the occurrence of “a network” seems to refer back to “a network” previously recited in claim 1 line 4, if this is true, it is suggested to applicant to change “a network” to --the network--. Similar problem exists for claim 12 line 3.

For claim 7 line 2, the occurrence of “the host” is the first occurrence, it is suggested to the applicant to change “the host” to --a host--. Similar problem exists for claim 10 line 2.

For claim 23 line 3, it is suggested to the applicant to change the occurrence of “a input processing module” to --an input processing module-- so that it is grammatically correct.

Also on line 5, the occurrence of “datapacket” seems to be a typo error, if this is true, it is suggested to the applicant to change “datapacket” to --data packet--.

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For claim 25, the occurrence of "the received packet" is the first occurrence, it is suggested to the applicant to change "the received packet" to --a received packet--.

For claim 28, the occurrences of "a NCB" and "a local memory" seems to refer back to "a network control block (NCB)" and "a local memory" previously recited in claim 27, if this is true, it is suggested to applicant to change "a NCB" and "a local memory" to --the NCB-- and --the local memory--, respectively.

Claims 3 – 9, 13, 14, 24, and 26 are objected to because they depend on an objected claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27 and 28 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For claims 27 and 28 are directed to a non-statutory subject matter because the claims recite a "network control block" which is a signal or a data structure.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 3, the occurrences of “the outbound IP state machine” and “the outbound MAC Transmit machine” have no antecedent basis.

For claim 4, the occurrences of “the outbound TCP state machine” and “the outbound IP state machine” have no antecedent basis.

For claim 24 line 1, the occurrence of “the first input processing module” has no antecedent basis.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1 – 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang et al. (US 6,526,446 B1).

For claims 1 and 2, Yang et al. teaches an inbound MAC receive state machine for processing MAC frames received from a network (see column 2 lines 35 – 37); an inbound IP verifier state machine for verifying IP packet headers (see column 9 lines 21 – 32); an inbound IP fragment processing state machine for processing and reassembling IP fragments (see column

9 lines 11 – 20); and an inbound TCP state machine for processing TCP segments received from an IP layer (see column 6 lines 51 – 55). Yang et al. also teaches an outbound MAC Transmit state machine that sends MAC frames to a network (see column 9 lines 51 – 57); an outbound IP state machine that processes IP data to be passed to a MAC layer for transmission; and an outbound TCP state machine that processes TCP data to be passed to the IP layer for transmission (see column 10 lines 19 – 24).

For claims 3 and 4, Yang et al. teaches the outbound IP state machine builds IP header data and passes the header data to the outbound MAC Transmit state machine (see column 9 lines 51 – 55) and the outbound IP state machine builds TCP header data and passes the header data to the outbound IP state machine (see column 10 lines 7 – 10).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. in view of the background of Connery et al. (US 5,937,169).

For claim 8, Yang et al. teaches all of the claimed subject matter with the exception of the inbound IP fragment processing state machine provides a timer to time each datagram reassembly with a programmable timer value. Connery et al. from the same field of endeavor discloses in his background that when the TCP module transmits a segment containing data, it puts a copy on the transmission queue and states a timer. When acknowledgment for that data is received, the segment is deleted from the queue. If the acknowledgment is not received before the timer turns out, the segment is retransmitted (see column 1 and 2 lines 64 – 67 and 1 – 2, respectively). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have a timer as taught by the background of Connery et al. into the IP fragment state machine as taught by Yang et al. The motivation for doing this is to increase the goodput of the network by insuring that all segmented packets reach its destination.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over the background of Boucher et al. (US 6,389,479 B1) in view of Yang et al.

For claim 23, Boucher et al. discloses in the background an acknowledgement processor module that handles any acknowledgement information included in the TCP packet; and a Data processor module that handles any data included in the TCP data packet (see column 2 lines 47 – 63). Boucher et al. fails to teach an input processing module that determines if a TCP connection is established and checks for TCP flags to determine if a TCP data packet should be processed. Yang et al. from the same field of endeavor teach a TCP segmentation enable (tcpSegEn) flag is asserted. If the tcpSegEn flag is not asserted (!tcpSegEn) and a hardware queue circuit is not full (!hwQueueFull), the present embodiment proceeds to step 506. If the tcpSegEn flag is asserted (tcpSegEn) and the hardware queue circuit is not full (!hwQueueFull), the present embodiment proceeds to step 508 (see column 11 lines 23 – 29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the input processor as taught by Yang et al. into the system as taught by Boucher et al. The motivation for doing this is to increase utilization of the

processor because it will not have to do unnecessary processing when the data packet is not TCP.

Allowable Subject Matter

16. Claims 5, 6, 7, 9, 10, and 26 are objected to as being dependent of a rejected claim based on prior art.

17. Claims 11 and 15 – 22 are allowed.

18. Claims 12 – 14 and 25 would be allowable if rewritten to overcome the objection under 37 CFR 1.75 set fourth in this Office action.

19. Claim 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter:

For claim 5, 6, 7, 9 and 10, the prior art fails to show alone or in combination the inbound IP verifier state machine passes non-IP data packets to a host; the inbound IP verifier state machine verifies IP packet header information and if the header information is valid, then temporarily stores the packet in an external memory; the inbound IP verifier state machine passes complete IP datagrams to the host that are non-TCP packets the inbound TCP state machine maintains a segment re-assembly list for each network connection that is linked to a network control block and is used to re-order TCP data segments; or the inbound TCP state machine passes in-order TCP segments to the host or to an upper layer protocol processor

For claim 11 – 22, the prior art fails to show alone or in combination a second in-bound processor for processing incoming TCP segments destined for iSCSI; a second outbound processor also acts as a pass through processor for TCP data processed by the first outbound processor; and the first inbound processor maintains a segment re-assembly list for each network connection and is linked with a network control block.

For claims 24 – 26, the prior art fails to show alone or in combination the first input processing module validates and saves TCP timestamps by checking if a received timestamp is greater than a most recently saved timestamp; the Data Processor module determines if the received packet was in order or out of order and trims the packet if it requires trimming; or TCP connection state is organized in network control blocks and stored in a local memory.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Boucher et al. (US 6,434,620 B1), Ben-Ze'ev et al. (US 6,687,757 B1), Oskouy et al. (US 6,791,947 B2), Philbrick et al. (US 7,076,568 B2), Goh et al. (US 6,373,841 B1), Wolrich et al. (US 7,149,226 B2), Philbrick et al. (US 7,167,927 B2), Clear et al. (US 2001/0053150 A1), Anand et al. (US 2002/0062333 A1), Philbrick et al. (US 2002/0095519 A1), Raval et al. (US 2003/0046418 A1), Lansing et al. (US 2003/0058889 A1), Calvignac et al. (US 20003/0231625 A1), and Joung (US 2006/0209897 A1) are recited to show a method and system for processing network data packets.

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22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary Mui whose telephone number is (571) 270-1420. The examiner can normally be reached on Mon - Fri 10 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on (571) 272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GM

2/6/2007


DANG T. TON
SUPERVISORY PATENT EXAMINER